

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

690 Walnut Ave. St. 150

Vallejo, CA 94592-1133

(707) 649-5453

(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-028196**Date Inspected:** 15-Aug-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 1300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Jobsite**CWI Name:** NA**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** TOWER and OBG**Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Robert A. DeArmond was present at the San Francisco Oakland Bay Bridge job site at Yerba Buena Island to observe erection and welding activities for the San Francisco Oakland Bay Bridge (SFOBB) project. This Quality Assurance Inspector (QAI) observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A) TOWER Weld Repair Y+8750 S-043 #13 Location "T"

B) TOWER Weld Repair Y+ 2540 S-045 #21 Location "G"

C) 13 W to 14W Edge Plate Back Weld

A). TOWER Weld Repair Y+8750 S-043 #13 Location "T"

The QAI observed that welder 6317-Wen Han Yu, was welding fill and cover passes for ESW repair located at Y+8750 S-043 #13 Location "T". This QAI observed Welding Procedure Specification (WPS) ABF-WPS-D15-1000-Repair and RWR 201208-10 was utilized. The QC inspector Andrew Keech verified the excavation of the repair area as well as Magnetic Particle Testing of the excavation for this location and found it to be acceptable, this information was relayed to the QAI. The welder then continued pre-heat throughout the area during welding utilizing heat racks on the back side of the repair area at 170 degrees Celsius (338 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was using the Shielded Metal Arc Welding (SMAW) electrode E7018 for the Complete Joint Penetration (CJP) weld in the vertical (3G) position with 3.1 mm electrode for the fill and cove pass. The welder utilized a power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Andrew Keech and was observed verifying and

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documenting the welding parameters for this location, along with overseeing the welding operations. At the time METS observation was performed No issues were noted by the QAI.

The welder was grinding the starts and stops between weld layers to a bright metal. The location was still in process at the end of this QAI's shift.

B). TOWER Weld Repair Y+ 2540 S-045 #21 Location "G"

The QAI observed that welder 6001-James Zhen, was welding fill passes for ESW repair located at Y+2540 S-045 #21 Location "G". This QAI observed welding of this location without an approved Welding Procedure Specification (WPS) and / or Repair Welding Specification (RWS) this incident was documented on QC daily report; (VT-102-1) dated August 14, 2012. In addition, QAI Mr. Joselito Lizardo generated an Incident Report for this date .

The welder then continued pre-heat throughout the area during the welding operation utilizing heat racks on the back side of the repair area at 170 degrees Celsius (338 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was using the Flux Cored Arc Welding (FCAW) electrode E71T-1M/T-9M for the Complete Joint Penetration (CJP) weld in the vertical (3G) position with 1.6 mm wire. The welding parameters were verified as 243.3 amps, 20.8 volts. The welder utilized a power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Andrew Keech and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations.

The welder was grinding the starts and stops between weld layers to a bright metal. The location was still in process at the end of this QAI's shift.

C). 13 W to 14W Edge Plate Back Weld

The QAI observed that welder Lin E Yun was welding the back-weld of plate "G" edge plate to edge plate (13W to 14W). This QAI observed these parameters as defined in Welding Procedure Specification (WPS) ABF-WPS-D15-1040-C. The QC inspector Steve Jenson verified the fit up for this location and found it to be acceptable, this information was relayed to the QAI. The welder then continued pre-heat throughout the area during welding using a propane type weed burner at 40 degrees Celsius (150 degrees F) which was verified using a tempstik and infrared gun by the QC. The welder was using the Shielded Metal Arc Welding (SMAW) electrode E7018 for the Complete Joint Penetration (CJP) weld in the vertical (3G) position with 3.2 mm electrode with 128 amps. The welder utilized a power grinder and power wire wheel for the interpass cleaning. The QC inspector for this location was Steve Jenson and was observed verifying and documenting the welding parameters for this location, along with overseeing the welding operations. At the time METS observation was performed. No issues were noted by the QAI.

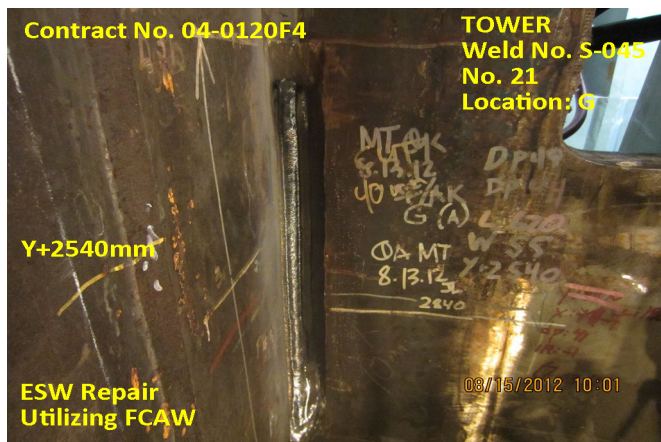
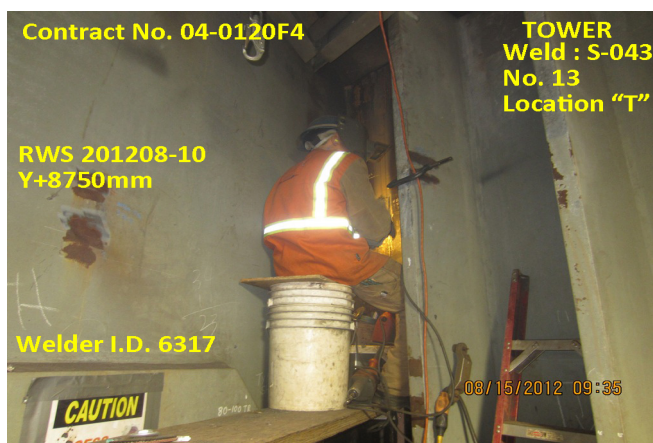
QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding utilizing the WPS's as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspectors utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The consumables utilized for the welding process stated

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appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators. Unless noted otherwise, all work observed on this date appeared to be in general compliance with the contract documents at the time of observations.



Summary of Conversations:

As mentioned above between QA and QC concerning this project

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510 385 5910, who represents the Office of Structural Materials for your project.

Inspected By: DeArmond, Robert

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer